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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/696,826	10/25/2000	William M. Clark, Jr.	B-3650 617089-5	4721

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EXAMINER

TRAN, THIEN F

ART UNIT

PAPER NUMBER

2811

DATE MAILED: 10/07/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application N .

09/696,826

Examiner

Thien Tran

Applicant(s)

CLARK, JR. ET AL.

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 27 June 2003.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-8 and 15-27 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 15-17, 19-22 and 25-27 is/are allowed.
- 6) ☒ Claim(s) 1-8, 18, 23, 24 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

## Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

## Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_

## DETAILED ACTION

### *Claim Objections*

Claim 1 is objected to because of the following informalities: line 7, "said two spaced-apart regions" should be --said two spaced-apart implanted regions--.

Appropriate correction is required.

Claim 15 is objected to because of the following informalities: line 9, "the two spaced-apart regions" should be --the two spaced-apart doped regions--; lines 10-11, "the two spaced-apart regions" should be --the two spaced-apart doped regions--.

Appropriate correction is required.

Claim 17 is objected to because of the following informalities: lines 1-2, "said two spaced-apart regions" should be --said two spaced-apart doped regions--. Appropriate correction is required.

Claim 18 is objected to because of the following informalities: line 8, "the two spaced-apart regions" should be --the two spaced-apart doped regions--; lines 9-10, "the two spaced-apart regions" should be --the two spaced-apart doped regions--; lines 14-15, "the two spaced-apart regions" should be --the two spaced-apart doped regions--; line 18, "the two spaced-apart regions" should be --the two spaced-apart doped regions--; lines 19-20, "the two spaced-apart regions" should be --the two spaced-apart doped regions--. Appropriate correction is required.

Claim 19 is objected to because of the following informalities: line 1, "A interconnection" should be --An interconnection--; line 7, line 9 and line 10, "conducting" should be --conducting--. Appropriate correction is required.

***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-8 and 18-26 are rejected under 35 U.S.C. 102(b) as being anticipated by Yahata (USPN 5,384,475).

Yahata discloses an interconnection structure (Figs. 3 and 4A-4C) for interconnecting two spaced-apart doped regions (8, 10a) of a common conductivity type (n-type) in a device comprising a first doped region 12 in the device forming a conducting channel between the two spaced-apart doped regions, the conducting channel being of the common conductivity type (n-type) and bridging a region between the two spaced-apart doped regions 8; and a second doped region 14 of opposite conductivity type (p-type) in the device, the second doped region being disposed between the two spaced-apart doped regions 8 of common conductivity type and overlying the conducting channel.

The recitations “a camouflaged interconnection” and “in a manner which inhibits reverse engineering thereof” in the claim preamble specify an intended use or field of use. It has been held that in device claims, intended use must result in a structural difference between the claim invention and the prior art in order to patentably distinguish the claim invention from the prior art. If the prior art structure is capable of performing the intended use, then it meets the claim. In re Casey, 152 USPQ 235

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(CCPA 1967); *In re Otto*, 136 USPQ 458, 459 (CCPA 1963). A claim containing a "recitation with respect to the manner in which a claimed apparatus is intended to be employed does not differentiate the claimed apparatus from a prior art apparatus" if the prior art apparatus teaches all the structural limitations of the claim. *Ex parte Masham*, 2 USPQ2d 1647 (Bd. Pat. App. & Inter. 1987). It is clear that Yahata discloses the same interconnection structure as claimed wherein a second doped region 14 of p-type is formed above the first doped region 12 of n-type. The second dope region 14 of Yahata hides and conceals the conducting channel 12; therefore, Yahata structure inherently discloses a camouflaged buried interconnect 12 which helps inhibit reverse engineering.

It is further noted that the limitation "implanted region" is taken to be product-by-process limitation. A product by process claim is directed to the product per se, no matter how actually made. See *In re Fessman*, 180 USPQ 324, 326 (CCPA 1974); *In re Marosi et al*, 218 USPQ 289, 292 (Fed. Cir. 1983); and particularly *In re Thorpe*, 227 USPQ 964, 966 (Fed. Cir. 1985), all of which make it clear that it is the patentability of the final structure of the product "gleaned" from the process steps, which must be determined in a "product by process" claim, and not the patentability of the process. See also MPEP 2113. Moreover, an old or obvious product produced by a new method is not a patentable product, whether claimed in "product by process" claims or not. Note that the applicant has the burden of proof in such cases, as the above case law makes clear. It is clear that the doped region 14 of Yahata formed by a different process (epitaxial instead of implanted) in the final structure is a doped region which is not

structural different from the second doped region formed by implantation in the present invention.

Regarding claims 2 and 6, the second doped region 14 overlying the conducting channel 12 has a larger area, when view in a direction normal to a major surface of the device, than has the conducting channel 12.

Regarding claims 3 and 7, the two spaced-apart doped regions form drain contacts, respectively of adjacent field effect transistors.

Regarding claims 4 and 8, the second doped region 14 is provided in the device over regions having no conducting channels formed therein (see Fig. 4C).

Regarding claim 5, Yahata discloses a plurality of interconnects 12 each interconnecting selected doped regions of the plurality of spaced-apart doped regions, each interconnect comprising a buried conducting channel bridging a region between the selected doped regions. The doped region 14 of p-type is disposed over the plurality of interconnects which inherently camouflages the majority of the plurality of interconnects.

Regarding claim 18, Yahata further discloses the device (see attached Fig. 3) having a plurality of spaced apart regions arranged in as transistors, said two spaced apart doped regions 8 (red D3), 9 (red S4) each forming an active region in different ones of said transistors; at least one additional spaced apart region 8 (red D1) of the common conductivity type, said at least one additional spaced apart region being spaced apart from the two spaced apart doped regions D3, S4 and forming an active region in yet another different one of said transistors; and at least one additional region

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14 of the opposite conductivity type is provided in said device, said at least one additional region being disposed laterally of and in direct contact with one of the two spaced apart doped region D3 and the at least one additional spaced apart region D1 of the common conductivity type, wherein the one of the two spaced apart regions D3 and the at least one additional spaced apart region D1 do not have the buried conducting channel formed therebetween.

Regarding claim 18, Yahata further discloses one additional spaced-apart region (9, 10b) of the common conductivity type (n-type), the additional space-apart region being spaced apart from the two spaced-apart regions (8, 10a); and one additional region 14 of the opposite conductivity type (p-type) in the device, the one additional region 14 being disposed laterally of and in contact with one of the two spaced-apart regions (8, 10a) and the additional spaced-apart region (9, 10b), wherein the one of the two spaced-apart regions (8, 10a) and the additional spaced-apart region (9, 10b) do not have the buried conducting channel formed therebetween.

Regarding claims 23 and 24, the second doped region 14 of p-type has a depth less than a depth of the first doped region 12.

### ***Response to Arguments***

Applicant's arguments filed 06-27-2003 have been fully considered but they are not persuasive. It is clear that Yahata discloses the claimed final structure (Figs. 3, 4a-4c) as described in details above. Furthermore, Applicant's argument cannot replace evidence when evidence is necessary. There is no evidence of the record that the structure formed by following the process taught by Yahata results in a different

structure from that formed by the process recited in the claims as alleged by Applicant.

It is a burden upon the Applicant to provide evidence establishing an unobvious difference between the claimed structure and structure of Yahata. In re Thorpe, 777 F.2d 695, 697, 227 USPQ 964, 966 (Fed. Cir. 1985).

***Allowable Subject Matter***

Claims 15-17, 19-22 and 25-27 are allowed.

***Conclusion***

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Thien Tran whose telephone number is (703) 308-4108. The examiner can normally be reached on 8:30AM - 5:00PM Monday through Friday.



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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Tom Thomas can be reached on (703) 308-2772. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.

tt  
October 2, 2003



Thien Tran  
Patent Examiner  
Technology Center 2800

